

**Impact of Varying Frequency
and Magnitude of Price
Increases for Clinical Reproductive
Health Services**

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EXECUTIVE SUMMARY

Context. Program managers need to develop pricing policies that can generate substantial income while minimizing client loss. In high-inflation settings, programs that adjust fees infrequently must implement large price increases just to keep pace with inflation. But such increases can create barriers to low-income clients and can result in large declines in utilization. Smaller but more frequent price increases might be better tolerated by clients.

Methods. The design was a repeated measures experiment. Three groups of five clinics were formed by matching on clinic volume, current service fees, and an index of client characteristics derived from an “ability-to-pay” survey. The three clinic groups were randomly assigned to one of three price change regimes: a small monthly increase, a larger trimester increase, and a still-larger semester increase. Changes in revenues and utilization were measured using CEMOPLAF’s routine reporting systems.

Results. A series of political and economic shocks forced CEMOPLAF to abandon the experimental pricing scheme in March of 2000. In July of 2002, the intervention was restarted, but soon was suspended again because of substantial deviations from the experimental price increases in the group making monthly price changes. A decision was made at this time to terminate the study. A project debriefing was held to discuss administrative and client-related problems with monthly price increases. Problems included lack of small coins for change and complaints from some clients about the frequency of price increases. The consensus was that these problems could be overcome with improved logistics and communication.

Conclusions: Although there are some administrative and public relations problems associated with frequent price increases during an inflationary period, these appear to be solvable without great difficulty in the clinic setting. Because it was not possible to complete the study, we do not know the relative effects of the frequency and magnitude of price increases for routine reproductive health services.

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I. BACKGROUND AND INTRODUCTION

A growing imbalance between resources and demand has created concerns about long-term sustainability of subsidized family planning and reproductive health programs. Charging fees to clients is one strategy for increasing the financial resources available to these programs. Many non-governmental organizations (NGOs) in developing countries depend heavily on fee revenue, and some public-sector providers are beginning to charge for services. But program managers and donors alike are concerned that increased reliance on user fees will reduce access to family planning and reproductive health services for poor couples -- the very clients traditionally targeted by public and non-profit providers. Creese (1991) summarizes this dilemma: "Fees have two effects: they generate revenue from those patients who judge the service to be worthwhile at the going price; and they divert patients who either cannot pay, or who judge the service less desirable than some alternative, to other sources of care".¹

The problem for program managers is to develop pricing policies that can generate substantial income while minimizing client loss. But little guidance is available on how to implement a successful pricing strategy in family planning and reproductive health programs. Some literature exists on the impact of user fees on demand for services, and a recent study found demand to be inelastic to price for various family planning and reproductive health services provided by an Ecuadorian NGO (Bratt et. al, 2002).² But elasticity may be highly conditioned by local factors such as client ability-to-

¹ Andrew L. Creese, 1991. "User charges for health care: a review of recent experience", *Health Policy and Planning* 6,4: 309-319.

² John H. Bratt, et. al. "The impact of price changes on demand for family planning and reproductive health services in Ecuador", *Health Policy and Planning* 17(3): 281-287.

pay and availability of substitute service outlets; thus, inelastic demand for a service in one context does not ensure that demand will be inelastic elsewhere. A current emphasis in operations research is to test low-cost approaches for measuring client willingness-to-pay, so that managers eventually will be able to set prices using information collected from current clients.

An issue that has not been studied is the question of *how often* to increase prices, and the related interaction between *frequency and magnitude* of price increases. In many programs, review and adjustment of fees occurs sporadically, at most once or twice per year. Possible advantages of infrequent price increases include lower administrative costs and fewer occasions for client and provider annoyance over higher fees. The major disadvantages occur in the context of moderate or high inflation (a common problem in much of the developing world). First, when the overall price level is rising, inflation rapidly erodes the real impact of a price increase, resulting in declining real revenues over time. Second, since relatively large increases are needed each time to keep pace with inflation, these increases may create sudden access barriers to poor clients, resulting in client loss. Many consumers may be able and willing to pay smaller, more frequent price increases common in other parts of the economy (for example, in markets and grocery stores), but may refuse to pay fees that suddenly increase by 20 percent or more.

II. FRAMEWORK FOR THE INTERVENTION

Program Setting

The study was conducted in collaboration with Centros Médicos de Orientación y Planificación de la Familia (CEMOPLAF), a non-governmental organization (NGO)

based in Quito, Ecuador. At the time the study was initiated (mid-1999) CEMOPLAF operated 21 family planning/reproductive health centers throughout Ecuador, as well as laboratories, mini-pharmacies and community based distribution (CBD) and social marketing programs, all offering products and services at subsidized prices.

CEMOPLAF management was interested in continuing to serve poor clients while simultaneously increasing financial sustainability. At the time, CEMOPLAF income derived from several sources; during the first eight months of 1998, 37% came from social marketing, 26% from clinical services, 22% from laboratories, 9% from mini-pharmacies and the remainder from other services such as ultrasound and colposcopy. Although managers were pleased with overall diversification of income, some felt that the proportion of income earned through clinical services should be increased. CEMOPLAF clinic directors have generally supported agency efforts to become more self-sufficient, but were concerned that higher fees might create barriers to poor clients.

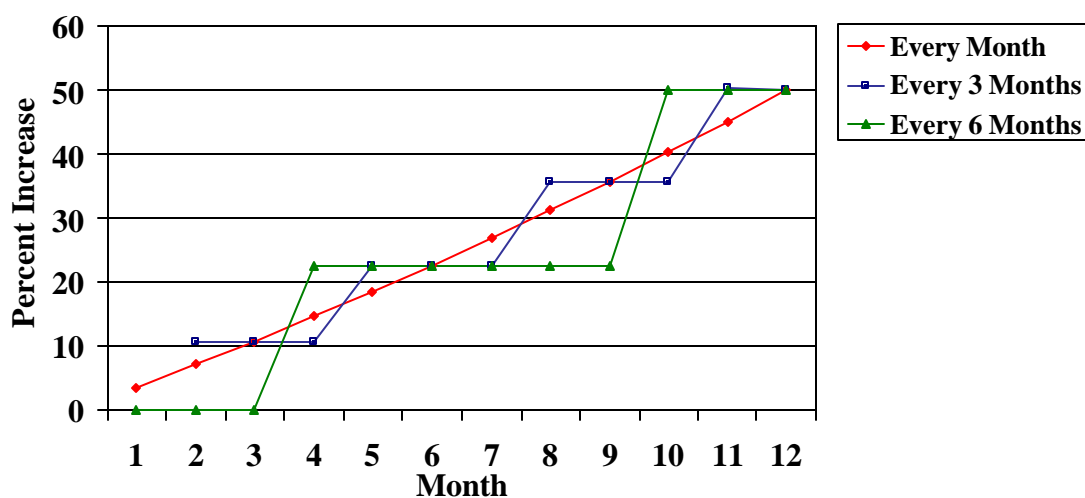
Because of high price inflation in the Ecuadorian economy (averaging 35% per year during the 1990s), CEMOPLAF had adopted a policy of increasing prices by 20 – 25% twice per year, in January and July. But some agency managers and clinic directors were concerned that such steep increases were difficult for poor clients to afford, especially in the months immediately following a price increase. Moreover, it was noted that most commercial-sector enterprises adjusted prices much more frequently than every six months, and consumers seemed to accept these smaller, more frequent increases without much complaint. Therefore, CEMOPLAF managers decided to test, through an operations research study, the hypothesis that smaller but more frequent fee increases would generate at least as much revenue as semi-annual increases, but with lower rates of

client loss.

Description of the Intervention

Originally the intervention was to be carried out over a one-year period, which would allow two six-month cycles of price increases to be observed. Different patterns of price increases were randomly assigned to three groups of clinics. One group (designated as the control group) continued to follow current CEMOPLAF policy and increase prices every six months by the customary 20-25 %. A second group increased prices every three months, but the percent change for each price increase was approximately one-half of the change in the control group. A third group increased prices every month, but the monthly percent change was approximately one-sixth the amount in the control group, and one-third the amount in the second group. As shown in Figure 1, the intervention was structured so that the cumulative compounded price increases in the treatment groups would be equivalent to the semiannual price increases implemented in the control group.

Figure 1: Timing and Magnitude of Experimental Price Increases



Two additional steps were taken to encourage compliance with the experimental price increases. First, study staff prepared a packet of material corresponding to each price increase in each clinic. The packet contained multiple copies of the new price list (for use by cashiers, secretaries and clinic directors) and pre-printed price labels to post on large price boards located in clinic waiting rooms. Second, study staff visited or telephoned clinics prior to scheduled price increases, to remind clinic directors that a planned price increase was due to take place.

III. RESEARCH METHODS

Research Objective

The objective of the study was to compare the impact of three patterns of price increases on demand for various reproductive health services and on income earned from those services. A secondary objective was to assess the feasibility (from an administrative perspective) of increasing fees more frequently but by a lower amount.

Research Design

The design of the study was a repeated measures experiment. Three groups of five clinics were formed purposively, matching on clinic volume, current service fees, and an index of client characteristics derived from an “ability-to-pay” survey. This survey used an instrument adapted from previous research conducted by FHI and the Population Council in five countries (Ecuador, Honduras, El Salvador, Mali and Kenya). Clients were selected for interview using a random-like process. All clients entering the

participating clinics during a one-month period (or the first 400 clients in that month, whichever occurred first) were interviewed. Questions included items on education, employment, family income and ownership of durable goods.

The three clinic groups were randomly assigned to one of two treatment conditions or to the control group. CEMOPLAF's routine reporting systems were used to produce data on number of services provided³ and income per service for a period of two years before and one year after the intervention.

Analysis Plan

The analysis plan proposed to examine changes in total clinic revenue and utilization (the dependent variables) by type of service. The plan was to measure these variables over a twelve-month period of observation, and then to perform a repeated-measures analysis of variance, including significance tests of the differences in group means, and of the group by month interaction.

IV. RESULTS

A. Implementation Problems

All preparatory steps (the ability-to-pay survey, clinic matching and random assignment to treatment and control conditions, specification of the various pricing schemes) were completed by mid-September 1999, and the intervention began in October. Unfortunately, the beginning of the intervention coincided with a series of economic and political shocks, including the following:

- In late 1999, the Ecuadorian government decided to replace the official currency (the Sucre) with the US dollar. Just prior to the date selected for the conversion from Sucres to dollars, a series of rapid exchange rate devaluations occurred that resulted in the loss of much of the Sucre-denominated wealth (i.e. bank accounts, etc.) in Ecuador.
- Opposition to the government of President Jaime Mahuad resulted in a series of regional and national strikes, culminating in Mahuad's resignation in January 2000.
- The inflation rate, approximately 50 percent per year in the first half of 1999, suddenly accelerated to over 100 percent per year at the end of 1999 and early 2000.

In March 2000, after the intervention had been running for six months, CEMOPLAF gave notification of the need to abandon the experimental pricing scheme in all 15 study clinics. The main reason was CEMOPLAF's need to increase prices to keep pace with inflation, and to match the price increases implemented by its competitors. FRONTIERS and CEMOPLAF agreed to suspend the intervention until economic and political conditions improved, and the study was put on hold in April 2000.

In July of 2002, CEMOPLAF management decided that economic conditions had improved sufficiently to allow the second six-month phase of the intervention to begin. FRONTIERS staff visited Ecuador and worked with CEMOPLAF researchers to reassign clinics to treatment and control groups and to calculate experimental price increases using updated information on service fees and rates of price inflation. The original experimental price increases had been calculated assuming an annual rate of inflation of

³ Only the four highest-volume services were studied, including IUD follow-up visits, gynecology consultations, prenatal visits and pediatric visits.

50 percent, but by mid-2002 inflation was running at an annual rate of approximately 15 percent; CEMOPLAF decided to increase prices by 10 percent over the six-month intervention period. This smaller overall rate of increase made it impossible to continue with the original study design (i.e., two treatment groups and a control group) because the differences in price changes between the treatment groups were so small. Thus, the second phase of the intervention was designed to only test differences between the monthly price change and the semi-annual price change.

Two months after the second phase began, CEMOPLAF management notified FRONTIERS of substantial deviations from the experimental price increases in the group making monthly price changes. Four of the seven clinics in this group failed to comply with the experimental increases, and stated reasons for non-compliance included:

- Concerns about pricing services above the level of fees charged by competing providers;
- Difficulties in managing currency on hand in order to make change;
- Desire not to be constrained by experimental price increases, so that clinic revenues could be increased;
- Concerns that clients could not afford the higher prices.

The high degree of noncompliance with experimental price increases corrupted the study design, and ultimately led to the decision in December 2002 to cancel the study entirely.

B. CEMOPLAF Project Debriefing Meeting

Although the problems described above made it impossible to achieve the primary research objective, it was still possible to address the secondary objective. A debriefing

meeting was held in Quito in May 2003 with CEMOPLAF clinic managers and senior staff, to discuss client-related and administrative problems associated with the monthly price increases. Specifically, the meeting sought to gather information on the following issues:

- Client perspectives on monthly price increases (awareness of increases, perceived reasons for increases, complaints, awareness of competitor prices);
- Clinic staff perspectives on increasing prices more frequently (problems with competition, administrative problems with increases such as updating price lists, keeping enough change on hand, impact on demand/revenue);
- CEMOPLAF senior management perspectives (clinic compliance with price increases, overall impact on revenues).

A key administrative problem mentioned by several attendees was difficulty in keeping enough small coins on hand to be able to make change (prices in the monthly increase group were rounded to the nearest penny). Clinic directors agreed that this problem would have been less acute if prices had been rounded to the nearest nickel. The most acute client-related problem was the task of influencing the attitudes of clients to accept monthly rather than semi-annual price increases. Even though these same clients face continually increasing prices in markets, grocery stores, gasoline stations and shops, they are accustomed to CEMOPLAF's prices increasing less often. Also, one clinic director reported that some clients in her facility suspected that the monthly price increases represented efforts by the cashier to extract a small bribe.

V. CONCLUSIONS

This study was designed to assess whether frequent smaller price increases would produce better outcomes (i.e., higher total revenues and lower client loss) than larger less-frequent price increases for programs operating in moderate or high-inflation environments. A series of political and economic shocks in Ecuador in 2000 and 2001 forced postponement of the intervention for more than two years, and non-compliance by clinic managers with experimental price increases led to the decision to terminate the study entirely in late 2002. Although we were not able to answer the primary research question, the study did show the feasibility of increasing prices on a monthly basis. Administrative problems encountered (lack of small-denomination currency, some opposition from clients) were mostly trivial and could be overcome with better logistics and improved communication between staff and clients about the rationale for more frequent price increases.

The failure of some clinics to follow pricing directions also illustrates the difficulty that can be encountered in carrying out multi-center intervention research in programs that are administratively decentralized. Strict adherence to the study protocol was difficult to maintain when pricing decisions were made at the clinic level; when faced with conflicts between the requirements of an experimental research design and the needs of the clinic (revenue growth, client complaints), managers predictably chose to protect their clinics at the expense of the study.